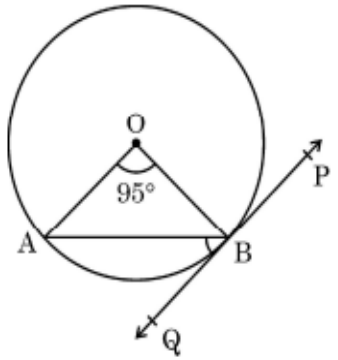
2023(30/1/1) -5Q(1M)

In the given figure, PQ is tangent to the circle centred at O. If $\angle AOB = 95^\circ$, then the measure of $\angle ABQ$ will be



(A) 47.5° (B) 42.5°
(C) 85° (D) 95°

2023 – 30/2/1 – 1 MARK

Assertion (A) : A tangent to a circle is perpendicular to the radius through the point of contact.

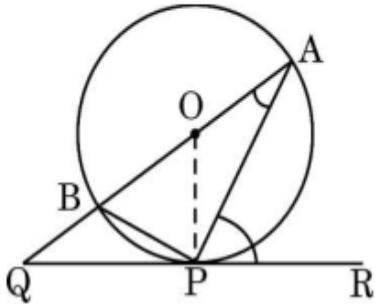
Reason (R) : The lengths of tangents drawn from an external point to a circle are equal.

2022-30/B/5 – 2 MARK

In two concentric circles, a chord of length 48 cm of the larger circle is a tangent to the smaller circle, whose radius is 7 cm. Find the radius of the larger circle.

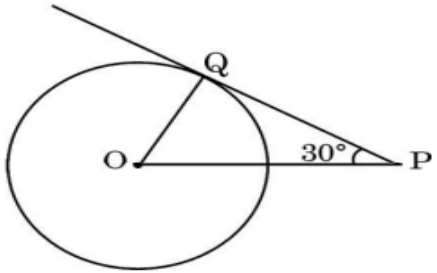
2023-30/2/1- 3 MARK

In the given figure, O is the centre of the circle and QPR is a tangent to it at P. Prove that $\angle QAP + \angle APR = 90^\circ$.



2023-30/5/3- 1 mark

PQ is tangent to a circle centered at O. If the radius of the circle is 5 cm, then the length of the tangent PQ is :



(a) $5\sqrt{3}$ cm (b) $\frac{10}{\sqrt{3}}$ cm
(c) 10 cm (d) $\frac{5}{\sqrt{3}}$ cm

2023-30/4/1- 1 MARK

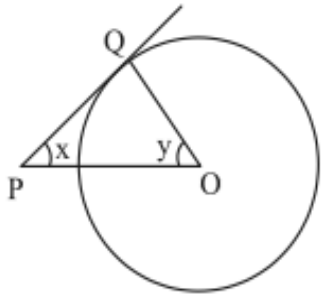
In the given figure, PQ is a tangent to the circle with centre O. If $\angle OPQ = x$, $\angle POQ = y$, then $x + y$ is :

(a) 45^o

(b) 90^o

(c) 60^o

(d) 180^o



2023-30/4/1- 1 MARK

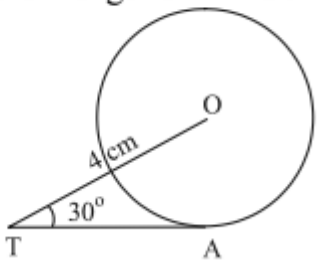
In the given figure, TA is a tangent to the circle with centre O such that OT = 4 cm, $\angle OTA = 30^o$, then length of TA is :

(a) $2\sqrt{3}$ cm

(b) 2 cm

(c) $2\sqrt{2}$ cm

(d) $\sqrt{3}$ cm



2023-30/4/1- 3 MARK

Two concentric circles are of radii 5 cm and 3 cm. Find the length of the chord of the larger circle which touches the smaller circle.

2023-30/4/2- 1 MARK

The length of tangent drawn to a circle of radius 9 cm from a point 41 cm from the centre is :

(a) 40 cm (b) 9 cm (c) 41 cm (d) 50 cm

2023-30/4/2 – 1 MARK

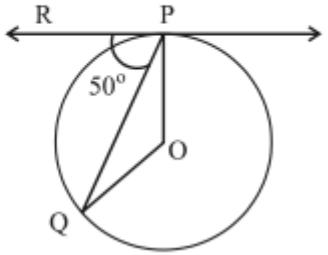
In the given figure, O is the centre of the circle and PQ is the chord. If the tangent PR at P makes an angle of 50^o with PQ, then the measure of $\angle POQ$ is :

(a) 50^o

(b) 40^o

(c) 100^o

(d) 130^o



2023-30/4/3- 1 MARK

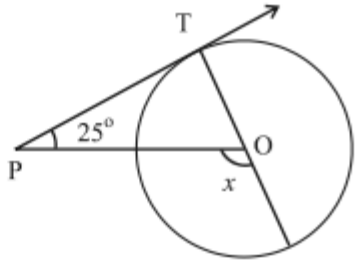
In the given figure, PT is a tangent at T to the circle with centre O. If $\angle TPO = 25^\circ$, then x is equal to :

(a) 25°

(b) 65°

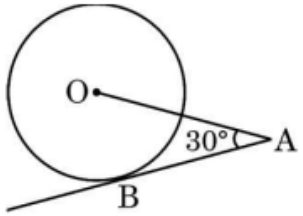
(c) 90°

(d) 115°



2023-30/5/1 – 1 MARK

In the given figure, AB is a tangent to the circle centered at O. If OA = 6 cm and $\angle OAB = 30^\circ$, then the radius of the circle is :



(a) 3 cm

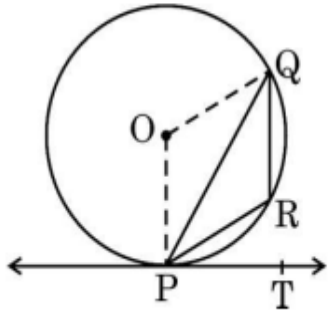
(b) $3\sqrt{3}$ cm

(c) 2 cm

(d) $\sqrt{3}$ cm

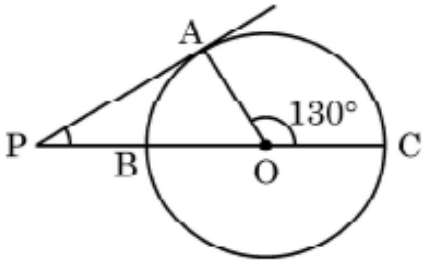
2023-30/5/2- 2 MARK

In the given figure, PQ is a chord of the circle centered at O. PT is a tangent to the circle at P. If $\angle QPT = 55^\circ$, then find $\angle PRQ$.



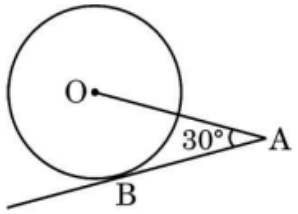
2023-30/6/1 – 2 mark

In the given figure, PA is a tangent to the circle drawn from the external point P and PBC is the secant to the circle with BC as diameter.
If $\angle AOC = 130^\circ$, then find the measure of $\angle APB$, where O is the centre of the circle.



2023-30/5/3- 1 MARK

In the given figure, AB is a tangent to the circle centered at O. If OA = 6 cm and ∠ OAB = 30°, then the radius of the circle is :



(a) 3 cm (b) $3\sqrt{3}$ cm

(c) 2 cm (d) $\sqrt{3}$ cm

2020-30/3/1- 2 MARK

In Fig. 4 AB is a chord of circle with centre O, AOC is diameter and AT is tangent at A. Prove that ∠BAT = ∠ACB.

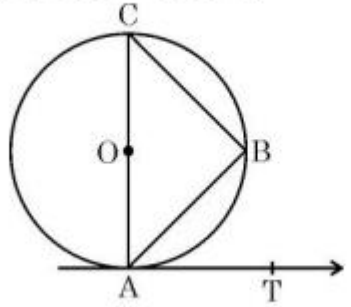
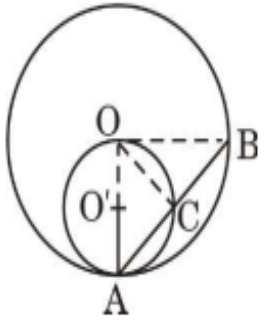


Fig. 4

20-23-30/3/1-4 mark

In Figure 3, two circles with centres at O and O′ of radii 2r and r respectively, touch each other internally at A. A chord AB of the bigger circle meets the smaller circle at C. Show that C bisects AB.



2020-30/3/2- 2 MARK

In Fig. 4, PA is a tangent from an external point P to a circle with centre O. If ∠POB = 115°, find ∠APO.

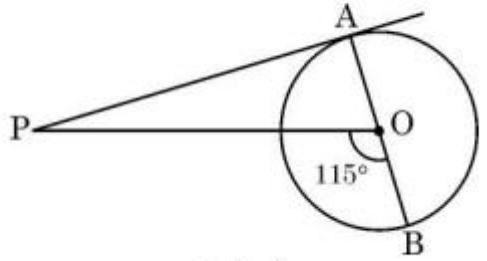


Fig. 4.

2020-30/4/1- 1 MARK

From an external point Q, the length of the tangent to a circle is 5 cm and the distance of Q from the centre is 8 cm. The radius of the circle is

(A) 39 cm

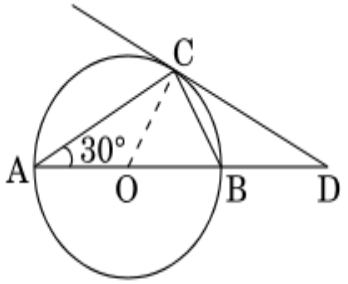
(B) 3 cm

(C) $\sqrt{39}$ cm

(D) 7 cm

2020-30/4/3 – 3 MARK

In Figure-7, AB is the diameter of a circle with centre O and AC is its chord such that $\angle BAC = 30°$. If the tangent drawn at C intersects extended AB at D, then show that BC = BD.



2019_30-3-1- 1 MARK

Two concentric circles of radii a and b (a > b) are given. Find the length of
the chord of the larger circle which touches the smaller circle.

2019_30-5-3- 3 MARK

In two concentric circles, prove that all chords of the outer circle which
touch the inner circle, are of equal length.

M- 2015 – 1 MARK

In Figure 2, PQ is a chord of a circle with centre O and PT is a tangent. If $\angle QPT = 60°$, find $\angle PRQ$.

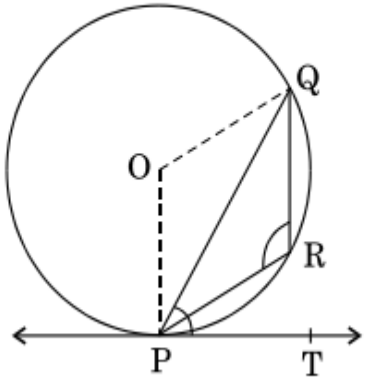


Figure 2

m_2015 – 2 MARK

- PROVE THAT THE TANGENT DRAWN AT THE MID-POINT OF AN ARC OF A CIRCLE IS PARALLEL TO THE CHORD JOINING THE END POINTS OF THE ARC.

m_2016 – 1 MARK

In fig.1, PQ is a tangent at a point C to a circle with centre O. If AB is a diameter and $\angle CAB = 30°$, find $\angle PCA$.

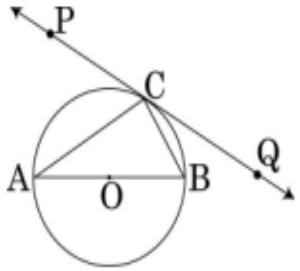


Figure 1

m_f_2017 – 1 mark

PQ is a tangent drawn from an external point P to a circle with centre O, QOR is the diameter of the circle. If $\angle POR = 120°$, what is the measure of $\angle OPQ$?

m_2016 – 1 MARK – 4 MARK

In Fig. 7, two equal circles, with centres O and O', touch each other at X.OO' produced meets the circle with centre O' at A. AC is tangent to the circle with centre O, at the point C. O'D is perpendicular to AC. Find the value of $\frac{DO'}{CO}$.

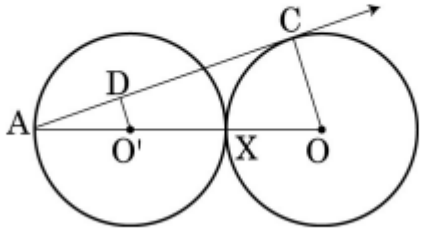


figure 7

MF2015- 4 MARK

In Figure 4, O is the centre of the circle and TP is the tangent to the circle from an external point T. If $\angle PBT = 30°$, prove that BA : AT = 2 : 1.

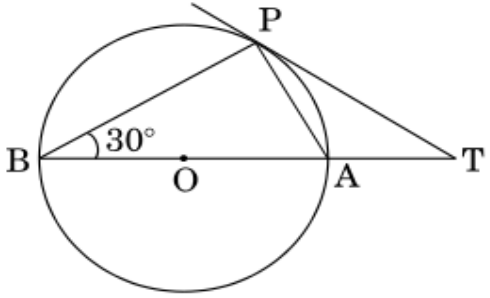


Figure 4

MD 2015- 2 MARK

In Fig. 2, AB is the diameter of a circle with centre O and AT is a tangent. If $\angle AOQ = 58°$, find $\angle ATQ$.

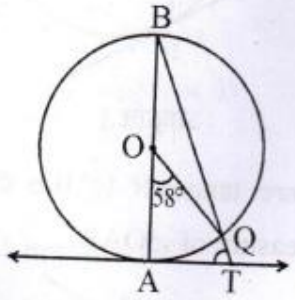


Figure 2

M 2019- 3 MARK

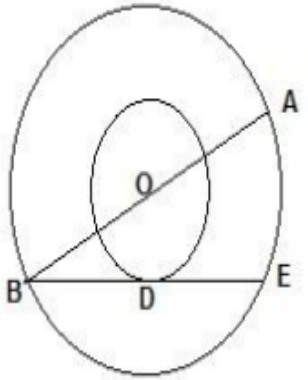
The radii of two concentric circles are 13 cm and 8 cm. AB is a diameter of the bigger circle and BD is a tangent to the smaller circle touching it at D and intersecting the larger circle at P on producing. Find the length of AP.

Ms 2021- 1 MARK

PQ is a tangent to a circle with centre O at point P. If ΔOPQ is an isosceles triangle, then find $\angle OQP$.

M 2016- 3 MARK

14. In the given figure, the radii of two concentric circles are 13 cm and 8 cm. AB is diameter of the bigger circle. BD is the tangent to the smaller circle touching it at D. Find the length AD.



15. P & Q are centres of circles of radii 9 cm and 2 cm respectively. PQ= 17cm. R is the centre of the circle of radius x cm which touches the above circle externally. Given that angle PRQ is 90^{o}. Write an equation in x and solve it.